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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,199	12/14/2001	Adnan Kavak	SAMS01-00163	2594

7590 05/17/2005

Docket Clerk  
P.O. Drawer 800889  
Dallas, TX 75380

EXAMINER
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PHUONG, DAI

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/023,199	Applicant(s) KAVAK ET AL.	
	Examiner Dai A Phuong	Art Unit 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

1. Applicant's arguments filed December 13, 2004 have been fully considered but they are not persuasive.

Regarding argument citing U.S. Patents to traverse a 35. U.S.C. 112 Rejection, see MPEP 1701, patents are presumed valid and as such are not pertinent to prosecution of patent applications.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Regarding claims 1-4, 10 and 13, the term "capable of" renders the claim indefinite (not positive) as to whether the claimed structure actually performs the claimed function.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Tan Boon et al. (U.S. 6,031,831).

Regarding claim 1, Tan Boon et al. disclose for use in wireless network communications system comprising a base transceiver station having an adaptive antenna array and a mobile station having a first mobile antenna and a second mobile antenna, an apparatus for improving downlink performance of said adaptive antenna array of said base transceiver station (col. 3, lines 14-21), said apparatus comprising: a spatial signature estimator associated with said base transceiver station, said spatial signature estimator capable of obtaining a spatial signature from a signal received by said base transceiver station from said first mobile antenna and that is capable of obtaining a spatial signature from a signal received by said base transceiver station from said second mobile antenna (col. 6, lines 52 to col. 7, lines 14); and correlation circuitry coupled to said spatial signature estimator, said correlation circuitry capable of using spatial signatures obtained from said first mobile antenna and from said second mobile antenna to identify a least changing spatial signature, and capable of using said least changing spatial signature to obtain a downlink beamforming weight vector (col. 6, lines 52 to col. 7, lines 14).

Regarding claim 11, Tan Boon et al. disclose for use in wireless network communications system comprising a base transceiver station having an adaptive antenna array and a mobile station having a first mobile antenna and a second mobile antenna, a method for improving downlink performance of said adaptive antenna array of said base transceiver station (col. 3, lines 14-21), said method comprising the steps of: obtaining in a spatial signature estimator associated with said base transceiver station a spatial signature from a signal received by said base transceiver station from said first mobile antenna(col. 6, lines 52 to col. 7, lines 14); obtaining in said spatial signature estimator a spatial signature from a signal received by said base transceiver station from said second mobile antenna (col. 6, lines 52 to col. 7, lines 14); and

using spatial signatures obtained from said first mobile antenna and from said second mobile antenna to identify a least changing spatial signature (col. 6, lines 52 to col. 7, lines 14); and using said least changing spatial signature to obtain a downlink beamforming weight vector (col. 6, lines 52 to col. 7, lines 14).

### **Reasons for Allowance**

6. The following is an examiner's statement of reasons for allowance:

Claims 2-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claim 2

The following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the apparatus wherein said spatial signature estimator is capable of obtaining a **first set of spatial signatures comprising a first spatial signature from said first mobile antenna and a first spatial signature from said second mobile antenna during a first portion of an uplink interval of a time division duplex slot associated with said first mobile antenna and said second mobile antenna; and wherein said spatial signature estimator is capable of obtaining a second set of spatial signatures comprising a second spatial signature from said first mobile antenna and a second spatial signature from said second mobile antenna during a second portion of said uplink interval; and wherein said correlation circuitry is capable of measuring changes in said second set of spatial signatures with respect to said first set of spatial signatures to identify said least changing spatial signature.**

Claims 12-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claim 12

The following is a statement of reason for the indication of allowance: the prior art made of record and considered pertinent to the applicant's disclosure does not disclose nor fairly suggest the method comprising the steps of: **obtaining in said spatial signature estimator a first set of spatial signatures comprising a first spatial signature from said first mobile antenna and a first spatial signature from said second mobile antenna during a first portion of an uplink interval of a time division duplex slot associated with said first mobile antenna and said second mobile antenna; and obtaining in said spatial signature estimator a second set of spatial signatures comprising a second spatial signature from said first mobile antenna and a second spatial signature from said second mobile antenna during a second portion of said uplink interval; and using correlation circuitry to measure changes in said second set of spatial signatures with respect to said first set of spatial signatures to identify said least changing spatial signature.**

### Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Liu et al. (U.S. 6122260) smart antenna

Gesbert et al. (U.S. 6377819) transmit and receive processing

Xu (U.S. 6496535) effective channel estimation

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Pallonen (U.S. 6850761) position of a mobile station

Liu et al. (U.S. 6870808) channel allocation

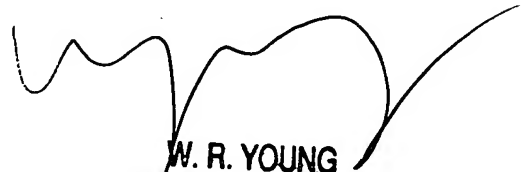
Leifer et al. (Pub. No: 2002/0013164) null deepening for an adaptive antenna

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-7896.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dai Phuong  
AU: 2685  
Date: 04-28-2005



W. R. YOUNG  
PRIMARY EXAMINER